

REMARKS

Claim 1 has been canceled and claim 2 has been placed in independent form specifying that the high thermal conductive material has a coefficient of thermal expansion of no more than $3 \times 10^{-6}/K$; see the specification at page 5, lines 16 to 18 and now-canceled claims 9 to 11. Claims 23 and 24 have been rewritten in independent form. The claims before the Examiner thus are claims 2 to 8 and 12 to 25.

The indication that claims 14, 16, 18, 20, and 22 to 25 contain allowable subject matter is noted with appreciation. Applicants respectfully submit for the reason given below that all pending claims are allowable.

The rejection of claims 1 to 6 and 12 under 35 USC 102 as anticipated by Yamagata et al. '168, if applied to the claims as amended, is respectfully traversed. As noted above, claim 2 has been put in independent form and specifies that the material has a coefficient of thermal expansion of no more than $3 \times 10^{-6}/K$. The Examiner is directed to Table 1 of Yamagata et al. '168. No material shown there has a coefficient of thermal expansion with the low value recited in claim 2. Examples 28 to 31 (clearly representative examples) have a coefficient of thermal expansion ranging from 3.83×10^{-6} to 3.85×10^{-6} . These values are 1.28 times greater than the maximum value recited in claim 2. It is

believed that the instant high thermal conductive material has a lower coefficient of thermal expansion because of nest-like structure formation as a result of interaction between carbon and the metallic silicon impregnated into the voids; see the paragraph bridging pages 11 and 12 of the specification. See also the values for the coefficient of thermal expansion in Tables 1 and 2 on pages 20 and 21 of the specification. The rejection therefore should be withdrawn.

The rejection of claims 7 to 11 under 35 USC 103 as unpatentable over Yamagata et al. '168 in view of Kojima et al. '116 is also respectfully traversed. It was asserted in the third full paragraph on page 4 of the Office Action that there was allegedly a prima facie case of obviousness where the claim ranges and the prior art ranges do not overlap but are close enough that one skilled in the art would have expected to have the same properties. Applicants respectfully disagree and respectfully submit that there is a significant and patentable difference in the coefficients of thermal expansion of the present claims and the values in Yamagata et al. '168. Kojima et al. '116 relates to silicon carbide sintered body production causing a particular technique that does not result in a material as claimed here with voids formed by bonding silicon carbide crystals are impregnated with metal silicon. The

mention of α and β silicon carbide in the secondary reference does not direct the artisan to the present invention. The rejection should be withdrawn.

The rejection of claims 13, 15, 17, 19, and 21 under 35 USC 103 as unpatentable over Yamagata et al. '168 in view of JP '552 is also respectfully traversed. The claims as amended patentably distinguish over this combination of references for reasons given above. Neither reference teaches or suggests a high thermal conductive material as claimed having the specified upper limit on the coefficient of thermal expansion. Moreover, JP '552 is directed to a process of forming a silicon carbide sintered compact with no remaining silicon; the PROBLEM TO BE SOLVED in the abstract and lines 3 to 9 of paragraph [0038] which we are informed reads:

If the added amount of the organic material is below 10%, carbon which is used to be converted into SiC by virtue of Si to be impregnated in the next step will be short, thereby the resultant will be poor in the anti-heat resistance, and furthermore, it would be difficult to attain the desired conductivity since the unreacted Si remains within the pores.

The rejection should be withdrawn as well. The mention of a phenolic resin in JP '203 does not make the rejection proper.

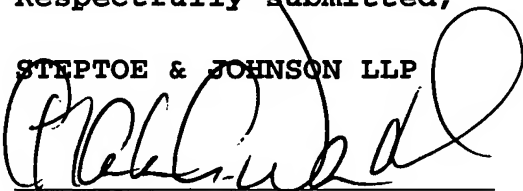
The Examiner is thanked for acknowledging receipt of the certified copy of the priority document and for listing references submitted with an Information Disclosure Statement.

In view of the foregoing revisions and remarks, it is respectfully submitted that the application is in condition for allowance and a USPTO paper to those ends is earnestly solicited.

The Examiner is requested to telephone the undersigned if additional changes are required in the case prior to allowance.

Respectfully submitted,

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